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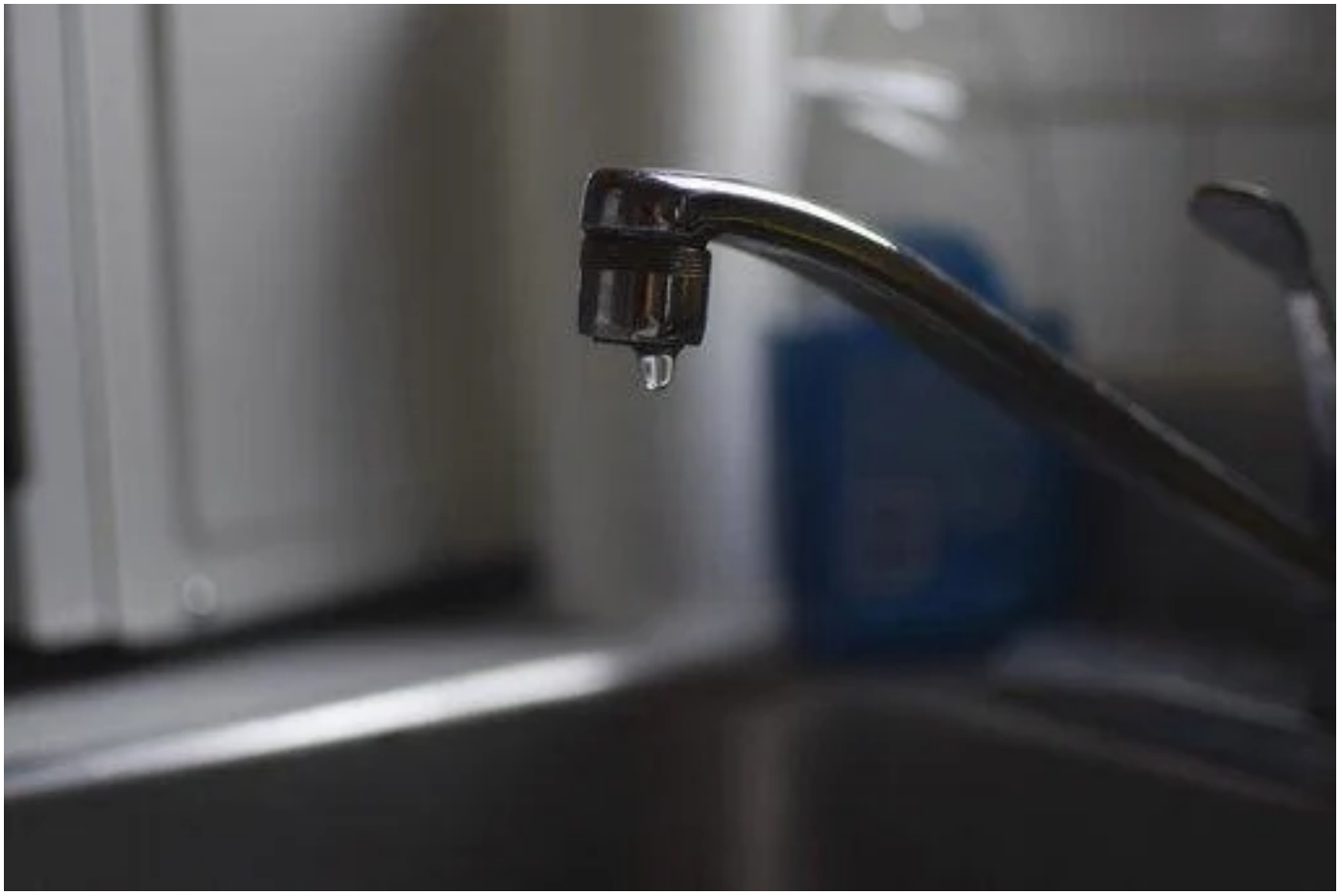
Opinion | Wisconsin must do a better job protecting public from toxic groundwater

By David A. Belluck | guest column
Jun 16, 2022



More attention has been paid to emerging contaminants across Wisconsin including as PFAS, a group of chemicals linked to cancer, reproductive problems and a host of other health issues.

Mackenzie Lad

Wisconsin's groundwater protection standards setting program needs reinvigoration. Recent failure to pass proposed PFAS groundwater standards and reluctance to revise existing nitrate and nitrite standards are cases in point. As Wisconsin's first groundwater toxicologist I believe my observations provide insight into these matters.

Wisconsin's Department of Natural Resources Board recently rejected proposed PFAS standards, apparently because of opaque Wisconsin Department of Health Services (DHS) presentations and written materials, inadequate communications strategy, inability to explain the nuts and bolts of the scientific process to calculate standards, failure to communicate the importance of the standards and their scientific basis, and lack of interactions with board members to identify and respond to their concerns. DHS refused to provide straight answers to my technical questions on their standards, although I helped invent many of the methods they use today. Apparently DHS is unable to communicate effectively to multiple audiences.

Why were the proposed PFAS standards reasonable and important? Apparently the board did not know and DHS did not explain. In fact, there are arguments to propose standards with lower concentrations. Toxicological data and groundwater monitoring methods are limited or non-existent for hundreds or even thousands of PFAS chemicals, some of which may be present in regulated PFAS contaminated drinking water or groundwater samples but remain unmeasured or not evaluated for human health risks.

Lowering standards to compensate for these uncertainties is a strong argument not presented. The board did not know that they could reduce calculated standards up to 10,000-fold based on data uncertainties.

Business, lobbying and anti-regulatory politicians reacted to agencies' failures to effectively organize, communicate and defend proposed standards by muddying the waters with half-truths, alleging bad science to undermine the proposed standards' credibility and that of their authors. Their pushback won the day, despite lack of technical documentation to support claims of shoddy work by Wisconsin toxicologists.

Wisconsin's insular environmental community, self admittedly lacking scientific expertise, could not muster technical arguments or mobilize members to counterbalance anti-regulatory forces. Environmentalists seem resigned to trying to hold onto protections won by their scientist predecessors in government.

The end result of this dance of the ill-informed, technically bereft, communication-impaired or excluded was another failure to protect Wisconsin residents from health risks posed by drinking contaminated water. In this most recent case, from PFAS.

Apparently, the DNR Board thought that as toxicological uncertainties increase, so should the proposed standard numerical concentration value. This is backward thinking, exactly the opposite of regulatory practice. The board pointed to the U.S. Environmental Protection Agency for guidance on PFAS standards. The EPA is not reliable because it may fail to identify when their standard or guidance concentrations are management decisions versus science-based numbers.

A June 15 article in the Washington Post titled "EPA Warns Toxic 'Forever Chemicals' More Dangerous Than Once Thought" demonstrates why the Legislature requires Wisconsin state agencies to establish and enforce groundwater contaminant standards. Just as in the 1980s, Wisconsin cannot rely on the federal government for timely and adequate health protective measures for groundwater contaminants.

Nitrate and nitrite are prime examples of the EPA's lax scientific approach to standard-setting. The agency apparently set these standards based on considerations other than pure public health protection. In the early 1990s, nitrate was not an infant health problem in public drinking water supplies. In fact, review of the full epidemiology and toxicology publication database (not provided to the states by the EPA to write their drinking water and/or groundwater standards) demonstrates data of poor quality — or worse. Infant nitrate ingestion case data does not allow for prediction of blue baby syndrome (methemoglobinemia) cases and represents high uncertainty. High uncertainties, according to decades of precedent, should lower a standard's numerical value by 10- to 100-fold. The current nitrate standard reflects no uncertainties and could be considered under-protective.

I notified Wisconsin agencies and other states, as well as the EPA, Health Canada and the World Health Organization, of my findings, some briefly noted above, and of the need for standard/guideline revision. The EPA refuses to communicate on these findings, despite requirements to do so. Other agencies show little interest. Given my finding of "lost" blue baby cases resulting in illness or death below the current nitrate standard, one would think it would pique their interest.

The EPA claims the nitrate standard has achieved safety in public drinking water supplies. The problem with this assertion is that nitrate did not cause blue baby syndrome in public drinking water supplies before adoption of the EPA standard. Thus, safety cannot be proven. In essence, the EPA and the states passed a nitrate drinking water standard for a nonexistent infant methemoglobinemia problem in public systems, for a population of infants not at risk, and abandoned rural private well water users where blue baby cases occurred. This inequity persists to this day.

As it was in the early 1980s in Wisconsin, it is time to get serious about setting health protective groundwater standards. Too many emerging chemicals overwhelm the system, while legacy contaminants continue to pose health risks, many not integrated into the existing standards.

We can either move forward with alacrity or we can expect to drink our neighbors' diluted industrial, agricultural and toilet wastes.

David A. Belluck, currently writing under the auspices of Tumbleweed Books LLC, was Wisconsin's first state toxicologist and state groundwater toxicologist in the 1980s. He participated in writing the first several cycles of Wisconsin groundwater standards. He is currently writing a book on nitrate, nitrite and the need for revised drinking water and groundwater standards.

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